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ABSTRACT

In attempts to understand the process of literacy acquisition, many researchers have devised models of reading. The basic elements of most reading acquisition models include word, or print knowledge and comprehension. The inadequacy and global nature of the conversational model of language proficiency provide impetus for C.E. Snow's development of a multidimensional model. Logical parallels exist between Snow's model of oral language proficiency and a model for reading acquisition and proficiency. Word knowledge takes the place of Snow's information load dimension, background knowledge retains much the same meaning and import, while "support" is substituted for the audience parameter, and "voice" serves as the fourth dimension. The word knowledge component consists of decoding, automaticity, and vocabulary, and there are at least two factors at work within the realm of background knowledge--reader experience and text factors. The support dimension encompasses an interaction of three factors--reader, text, and instructor. Voice, the fourth dimension, consists of self awareness and a transition from self to other. There is considerable interaction among the factors in this model, and in many cases, reciprocal relationships are apparent. Once children's literacy understandings have been carefully assessed, the model can provide information regarding what can be expected from the children, what measures of support would be appropriate, where strengths or weaknesses might exist, and what means might be used to take advantage of or compensate for them. (Contains 50 references and 3 figures.) (RS)

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RUNNING HEAD: Reading Proficiency Model

Exploring a Model of Reading Proficiency

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Oracy and literacy function through the medium of language, which shapes much of our thought process (Piaget, 1973; Vygotsky, 1962). Oral language development has served as a theoretical parallel and analogous process of literacy acquisition. Differences in interpretation arise from the source of language (e.g., the child or the environment), its development (e.g., stages or progressive continuum), and how closely literacy imitates oracy.

Existing Models of Reading

In attempts to understand the process of literacy acquisition, many researchers have devised models of reading (cf. Samuels & Kamil, 1984; Singer & Ruddell, 1985). Some are at a global level (e.g., Barr, Sadow, & Blachowicz, 1990; Gough & Tunmer, 1986; Seidenberg & McClelland, 1989), while others delve deeper to explain how various aspects of the procedure might be combined to create understanding of printed text (e.g., Brown, 1981; Goodman, 1971; Gough, 1972; LaBerge & Samuels, 1974). Still others take a developmental approach, exploring progressive phases of competency (Bear, 1989b; Lomax & McGee, 1987; Morris, 1993).

The basic elements of most reading acquisition models include word, or print knowledge, and comprehension which may include background knowledge, vocabulary, and metalinguistic awareness. Models differ in their point of focus between these two aspects of literacy; top-down models concentrate on comprehension (e.g., Goodman, 1970; Just & Carpenter, 1980; Kintsch & van Dijk, 1978; Smith, 1971; see Figure 1), while bottom-up paradigms emphasize the word level (e.g., Brown, 1981; Gough, 1972; LaBerge & Samuels, 1974). Furthermore, varying models reflect their designers' beliefs about the reader's route from written word to understanding. Several models indicate a direct path from grapheme to meaning (e.g., Goodman, 1970; Kolers,

1976; Smith, 1971); others describe a mediated route involving a phonological level between word and understanding (e.g., Gough, 1972; LaBerge & Samuels, 1974; Seidenberg & McClelland, 1989); while still others represent an interactive process with feedback loops (e.g., Brown, 1981; Rumelhart, 1977; Stanovich, 1980; 1984). One model (Matthewson, 1985) explores affect.

Relationships Between Oral and Written Language

The importance of apprehending and understanding the written word highlights the difference between oral and written language. Children developing oracy face the task of applying a label first to concrete and then to more abstract referents. Vygotsky (1962) refers to this as first-order symbolism and notes that social interaction facilitates its understanding. Literacy represents an additional level of abstraction. Objects and concepts are represented by oral words which in turn are represented by letters that map to sounds in a more or less systematic manner. In addition, function words (e.g., the, with, but), that have little inherent meaning but serve to "glue" language together, must be recognized for the written system to work (Ferreiro, 1978; 1985).

The prosodic flow of oral language further complicates the process of determining units of focus. Comprehending this system requires a degree of mental maturity and in addition, some understanding or key that gives entry to the code in use. In this regard, literacy is not a direct parallel to oracy and is not a "natural" process. However, both communication modes build on the same language base, and there are relevant parallels from oral language that can inform discussions of written language. Snow's (1991) model of language proficiency provides an opportunity to explore these connections.

Snow's Model of Language Proficiency

The inadequacy and global nature of the conversational model of language proficiency provide impetus for Snow's development of a multidimensional model. Consideration of the types of language tasks children are expected to master results in a model of developmental language proficiency that contains three (and perhaps four) dimensions (Figure 2). Information Load is the first dimension, representing the complexity of the message being expressed or received. A greeting or simple request would be at one end of this progression, while interpreting complicated directions would be near the other end. A second dimension involves Background Knowledge, where the continuum ranges from a high degree of shared information presumed by both speaker and listener to an area of little common knowledge that requires the speaker to forge connections and provide all information necessary for comprehension. Audience forms the third dimension of Snow's model and covers a range from total involvement and collaboration (e.g., when a parent understands what the child intends simply from one word and a gesture) to distance and neutrality (e.g., when an speaker addresses an uninterested audience). A possible fourth dimension, which Snow considers in a footnote, is Voice. Egocentric talk would be one end of this dimension; audience awareness and ability to adopt a range of tones to fit the situation would be the other.

A Model of Reading Proficiency

Logical parallels exist between Snow's model of oral language proficiency and a model for reading acquisition and proficiency. As an obvious focus of reading ability, Word Knowledge takes the place of Snow's Information Load dimension. Background Knowledge retains much the same meaning and import from the oral language model, while Support is substituted for the

Audience parameter. Finally, Voice serves as the fourth dimension, again replicating Snow's concept (Figure 3). The four dimensions collaborate as concurrent fields of development, although there exist degrees of independence in that one area may progress more rapidly than others, or one may lag behind and interfere with progress in the others. Time serves as an inescapable aspect of each dimension. Once the processes are set in motion, progress is anticipated barring specific interference. Each factor represents a fairly global composite of smaller components. For example, Background Knowledge includes knowledge about the world in general, knowledge of the particular passage and subject under consideration, knowledge of strategies to enhance understanding, and awareness of when understanding fails.

Word Knowledge

Most children enter first grade with an oral language base of approximately 10,000 words (Smith, 1992). Many have learned to write their own first names and the names of people and things that hold special meaning for them (e.g., Mom, cat, no). These words are frequently written in list form. Children's continuous text, in invented spelling or random letters, tends to have few spaces between words because as yet word is not a stable concept. Reading instruction begins at this time with the teacher pointing to words in simple rhymes, with isolated words flashed on cards, or with "pretend reading" of familiar stories and environmental print. The goals of these activities are to acquaint students with the concepts of print, to draw their attention to words, and to build a core of known sight words that can be used flexibly in other contexts. In general, these tasks are accomplished through simple, familiar texts with limited vocabularies so that given words are met with enough frequency to facilitate their memorization.

Decoding. Word knowledge must become more sophisticated for reading progress to continue. Memory can accommodate only a limited number of discrete items (Gough & Hillinger, 1980). Children must learn to "break the code" if they are to be successful in developing a reading vocabulary large enough to encompass functional reading. This process involves determining that there is a logical connection between speech and the printed symbols on the page and then developing increasingly sophisticated methods for categorizing these understandings. Typically, beginning readers attach to the initial letter of a word as a means of identifying it. With greater experience and a small repertoire of known words, children make stronger connections between sounds and letter representations, build on recognized patterns, and develop strategies (e.g., sight words, decoding, analogies, context) for identifying new words they encounter. Words may initially be recognized as icons (Ehri & Wilce, 1985; Juel, 1990) that cannot be manipulated into parts, but continued practice promotes letter-sound identification, chunking of orthographic patterns, and growth of word attack skills (Beck & Juel, 1992).

Automaticity. Accuracy and automaticity appear to be key factors in word knowledge development. Beginning readers focus much of their attention on determining the identity of individual words in text; they are "glued to the print" (Chall, 1983). Once a level of accuracy is achieved through use of decoding strategies and orthographic knowledge, reading becomes an increasingly fluent activity. Words can be retrieved so automatically that only minimal effort and attention are required (Bear, 1989a; LaBerge & Samuels, 1974). Automaticity at the word level allows the reader to focus greater attention on comprehension of the text and integration of new knowledge with prior understandings.

Vocabulary. Also included within the realm of Word Knowledge is vocabulary growth. Where broad generalizations and common terminology may be sufficient to meet the needs of young children, increased experience and sophistication necessitates more carefully refined language to precisely represent meaning. Once word recognition strategies are in place, children can focus greater attention on expanding their word knowledge to manage more complex lexical conditions (e.g., multisyllable words, concept- and information-dense texts).

Background Knowledge

A second necessary dimension of reading growth is provided by background knowledge. The ability to connect prior knowledge with new information gained from the reading passage supports comprehension of what is read. Thus, there are at least two factors at work within the realm of Background Knowledge: reader and text. Studies of hyperlexic children (Aaron, 1989) point to the importance of connecting the two. While hyperlexic children can read with ease almost any text put before them, their comprehension is minimal. Hyperlexics have automaticity at the word level, but they are unable to comprehend syntactic and semantic information beyond an elementary level.

Reader experience. Young children are limited in their understanding of the world by their experiences and by the connections they have been able to forge between those events. Thus, youngsters who have been taken to the zoo, the airport, the grocery store; who have visited the beach or the mountains; who have interacted with adults and peers; and who have a curious, adventurous nature have a richness of experiences that will serve them well as they enter the world of literacy. Experiences with nursery rhymes and picture books add to this richness by

exposing children to language play and story language as well as basic principles of how books and reading work.

Textual support. Beginning readers depend on texts that closely match what they know about the world. Often, these first texts are memorized rhymes, stories, or Language Experience (LEA) charts. Published stories contain illustrations that carry the story line and serve as another comprehension aid. The language in early reader texts offers support to literacy beginners through inclusion of rhyme and repetition of phrase patterns and high-frequency words.

Textual complexity. The partnership between reader and text becomes even more important as readers advance beyond the initial stages of reading. In the traditional view of literacy education, first and second grades are devoted to learning to read; third serves as a transition year; and from fourth grade on, reading to learn becomes the focus. Thus, the content load of early materials is simple and assumes common knowledge. Once the word level is under control, the information load increases not only in concepts but also in vocabulary.

Reader-text interaction. Readers must use their world knowledge as they encounter new ideas in the text; students who cannot forge these connections will not comprehend. Again, the difficulty may arise from either or both sides of the interaction. Children may be bankrupt in experiences upon which the text is predicated; they may be approaching the reading task passively without engaging what they do know about a topic; or they may be operating at a frustration level in that they lack the skills to decode the words in the text.

On the other side of the coin, the text may fail the reader. Expository text is often organized with dense information and concept loads that make comprehension difficult. Students,

whose reading instruction has been through predominantly narrative material, may fail to appreciate the different requirements made by fact-based formats. Many content texts are organized to assist the reader in obtaining the important information from the material (e.g., bold print, subheadings), but many students have not learned strategies to effectively use these structural aids. Researchers have designed strategies to alert students to content organization and promote its comprehension (e.g., Duffy & Roehler, 1987; Ogle, 1986; Palincsar & Brown, 1983; Pearson & Gallagher, 1983).

Support

Snow's Audience dimension involves the degree of cooperation and collaboration present from language partners. With written language, an intermediary element--the text--must be considered. Thus, the Support dimension in this reading model encompasses an interaction of three factors: (a) reader; (b) text; and (c) instructor.

Reader. The reader relies on a progressive series of strategies to get meaning from print. Prereaders use their memory of storybooks they have heard numerous times. With this tool they can "read" the text with considerable accuracy, incorporating much of the book language that is not common to everyday speech. Beginning readers also benefit from their memory of the text as they concentrate on matching speech to print. They invariably support the process of getting words from the page by reading orally, using their knowledge of oral language to confirm their interpretation of the print. Their miscues tend to be real words that fit the context and often begin with the same initial letter. This suggests that they are attempting to make sense of the print using what they know about oral language and about print. Beginning readers rely on fingerpointing to

each word as they read it to hold their place and focus their attention (Ehri & Sweet, 1991; Morris, 1980; 1981).

These forms of reader support gradually decrease as children become more automatic in identifying words. The average second grade reader has advanced to the point of whisper reading without pointing, and by third grade has completely internalized the process (Bear, 1989b; Chall, 1983; Juel, 1991). However, these strategies do not vanish; adults often use a pencil or card to point to the print and read orally in material they find particularly challenging (Brown, 1981).

Text. Textual support presents a similar progression from active collaboration with the reader to a more neutral position. Early texts provide the reader with considerable help in obtaining the written word. Rhymes and poetry take advantage of the prosody of oral language, are easily memorized, and often contain repetition. Other early materials contain repetitive phrases and predictable patterns (e.g., "I'll huff, and I'll puff, and I'll blow your house down"). They serve as safe havens and confidence builders for the beginning reader who can then tackle the unknown words in intervening sections. Pictures afford the beginning reader a third form of textual support. In many early texts, the written story is secondary to the illustrations in conveying meaning.

Prosodic and pattern support decrease as children become more proficient in apprehending the written word. Pictorial support also decreases for narrative texts to the point where most "chapter books" contain few illustrations by fourth or fifth grade. As children encounter expository texts for content areas, graphic support from maps, charts, and illustrations takes the place of pictures that accompanied narrative text. These graphic supports also become more limited, complex, and succinct across the grade levels.

Instructor. Support from instructors--teachers, parents, peers--tends to be consistent and fairly constant for emergent and beginning readers, and less involved and collaborative as the reader becomes more skilled. Parents who read the same story for the twentieth or fiftieth time fortify their children's story sense and memory for the text as well as provide book knowledge and concepts about print (Clay, 1975). Teachers in the first years of school build upon this base or attempt to provide it. By using Language Experience dictated stories, well-known stories, and easily memorized pieces as early texts, teachers give young readers a sense of confidence in their own abilities. Instructors of beginning readers also use a choral and echo reading technique which allows the novice to hear fluent reading and gives them enough support to imitate that behavior. Peers are active partners in the process of learning literacy, and as such, can offer perspectives which may be more understandable to the novice than those of the experienced reader.

As readers gain in proficiency and confidence, these sources of support are no longer essential; children learn to monitor their own reading behaviors and seek support as it is needed. Movement into content reading necessitates another form of instructor support. The reader must learn strategies for understanding and organizing information at the conceptual level, and teachers facilitate this process through think-alouds and comprehension strategies. But again the goal is toward independence and self-monitoring. Successful high school readers receive little outside support for the task of getting meaning from their reading.

Voice

The fourth dimension of the reading proficiency model is Voice. As in the other dimensions, there appears to be a development of competency and flexibility within this domain.

Self to other. Beginning readers, perhaps because of their egocentric stage of development or their concrete natures, appear to engage totally in the task that has their attention. The beginning reader can read or study the pictures; can read the words or fluently and expressively recite the memorized text; can concentrate on comprehending the words or the meaning. Reading is a very halting, labor-intensive, and expressionless activity for those who are working to get the word from print. Once attention can shift from the word level because known words have become automatic, children honor punctuation, include expression and prosody in their voices, and attend to the message carried by the print. At this point, it is much easier for children to adopt other voices and attempt to represent characterization. Voice carries into later reading as older readers create persuasive, ironic, and argumentative registers. Practiced readers can "hear" in their heads the voices of characters they meet in print.

Self awareness. A second aspect of Voice might be characterized as self-awareness and self-monitoring. Vygotsky (1962) details the development of inner speech which begins with complete verbalization of thought and progresses to the point where children maintain and organize their thinking through an internal voice. A similar process appears to develop in reading ability. The move from oral to silent reading is part of this process as children no longer need to hear what they have read to retain and make sense of it. The development of monitoring and self-correction strategies represents another stage of this progression of voice control.

Interaction of Model Dimensions

This model of reading proficiency closely follows Snow's (1991) model of oral language proficiency and incorporates many aspects of developmental and "bottom-up" reading theories.

As can be seen from the above descriptions of the four dimensions, there is considerable interaction among the factors, and in many cases, reciprocal relationships are apparent. For example, if beginning readers receive appropriate support from text and instruction, and if they bring print and letter-sound knowledge as well as related background experiences to the task, reading will happen. As word knowledge and fluency increase, less support is required and readers begin to experiment with the domain of voice.

However, in other ways, the dimensions have distinctive, independent features. It is possible to investigate within the boundaries of a single domain to determine the sequence and progression of features found there. The Word Knowledge domain provides the best example of this, since it has been the most thoroughly examined. Researchers who have explored the function of letter naming, letter-sound correspondences, phonemic segmentation, concept of word, orthographic development, and sight word growth have been concerned with the effects of these features on reading acquisition. In general, they have disregarded or attempted to neutralize the other domains in efforts to consider aspects of interest in word knowledge (e.g., Bradley & Bryant, 1983; Liberman & Shankweiler, 1991; Share, Jorm, Maclean, & Matthews, 1984; Walsh, Price, & Gillingham, 1988).

The three aspects of the Support dimension--reader, text, and instructor--have been observed to determine their effects on beginning reader performance. Children who have a concept of word but still lack enough sight words to read unfamiliar texts can experience success provided the appropriate levels of support are provided. The children read orally and often use fingerpointing to support their reading efforts. The level of text support is varied from highly

repetitive, rhythmic phrases (e.g., Mary Wore Her Red Dress and Henry Wore His Green Sneakers; Peek, 1985) to patterned, less prosodic text (e.g., Just Like Daddy; Asch, 1981) to a story with repetition occurring only in some of the vocabulary (e.g., The Hat; Marshall, 1989). Teacher support varies from choral and echo reading of lines or whole pages, to ultimately filling in only when a particular word is troublesome. The entry level of textual and teacher support is determined by the children's ease and accuracy of pointing to written words as they are spoken and by the number of sight words recalled from a primer word list. The appropriate mixture of support elements results in accurate and fairly fluent renditions of the text.

Manipulation of elements within a dimension will help to reveal the developmental progressions outlined as well as disclose children's reliance on other dimensions when pushed or stressed in the one under investigation. Two examples come to mind. In the Support dimension, first grade readers, who are hypothesized to be using oral reading as a support strategy, could be asked to read silently from a passage considered to be within their reading ability. If oral reading is indeed a necessary support strategy, the children would be unable to continue the task, would read with heavy subvocalization and pointing to the words, or would continue to read out loud. If they were then given a passage that they had read frequently before and were asked to read silently, it would seem likely that they would have greater success because they could rely on the additional support provided by memory.

A possible manipulation within the Word Knowledge domain would explore the areas of word and vocabulary knowledge. Materials could be developed by rewriting narrative passages using several levels of vocabulary and content complexity, (e.g., second, fourth, and seventh

grade levels). Readers judged to be instructional at these levels would then be assessed as they read the material. In all probability, the fourth grade readers would read the second level material accurately and fluently, would find the fourth level slightly more difficult, and would read the seventh level passage haltingly and with a greater number of errors. If asked to define vocabulary terms on the seventh level, the fourth grade readers would only be able to approximate the definitions. Their pronunciation of these terms might well be incorrectly stressed.

Conclusion

The model of reading proficiency presented here is based on an oral language proficiency model and takes two of its dimensions from that model. The other two dimensions--Word Knowledge and Support--are more specifically geared toward literacy. The global perspective of this literacy model makes it difficult to adequately discuss the various factors within each dimension and to fully investigate the possible interactions and repercussions of one domain on its neighbors. In addition, there has been neither time nor space to explore fully different means of testing hypotheses and predictions based on the model and its various domains.

This model of reading proficiency has the potential to inform educators and theorists about the reading process and the developmental continuum within it. Once children's literacy understandings have been carefully assessed, the model can provide information regarding what can be expected from the children, what measures of support would be appropriate, where strengths or weaknesses might exist, and what means might be used to take advantage of or compensate for them. Such knowledge will enable teachers to give children support where it is needed and provide access to the beauty and power of the written word.

References

Aaron, P. G. (1989). Dyslexia and hyperlexia. Dordrecht, Netherlands: Kluwer.

Asch, F. (1981). Just like daddy. Englewood Cliffs, NJ: Prentice Hall.

Barr, R., Sadow, M., & Blachowicz, C. (1990). Reading diagnosis for teachers, 2nd ed. White Plains, NY: Longman.

Bear, D. R. (1989a, November). Copying fluency, writing production, reading achievement and orthographic development. Paper presented at the National Reading Conference, San Antonio, TX.

Bear, D. R. (1989b). Why beginning reading must be word-by-word. Visible Language, 23, 353-367.

Beck, I. L., & Juel, C. (1992). The role of decoding in learning to read. In A. Farstrup & S. Samuels (Eds.), What research has to say about reading instruction, 2nd ed. Newark, DE: IRA.

Bradley L., & Bryant, P. E. (1983). Categorizing sounds and learning to read: A causal connection. Nature, 301, 419-421.

Brown, E. R. (1981). A theory of reading. J. Communication Disorders, 14, 443-466.

Chall, J. S. (1983). Stages of reading development. New York: McGraw-Hill.

Clay, M. M. (1975). What did I write? Auckland, New Zealand: Heinemann.

Duffy, G. G., & Roehler, L. R. (1987). Teaching reading skills as strategies. Reading Teacher, 40, 414-418.

Ehri, L. C., & Sweet, J. (1991). Fingerpoint-reading of memorized text: What enables beginners to process the print? Reading Research Quarterly, 26, 442-462.

Ehri, L. C., & Wilce, L. S. (1985). Movement into reading: Is the first stage of printed word learning visual or phonetic? Reading Research Quarterly, 20, 163-179.

Ferreiro, E. (1978). What is written in a written sentence? A developmental answer. Boston University Journal of Education, 160, 25-39.

Ferreiro, E. (1985). The relationship between oral and written language: The children's viewpoints. In M. M. Clark (Ed.), New directions in the study of reading, pp. 83-94. London: Falmer Press.

Goodman, K. S. (1968, 1973). The psycholinguistic nature of the reading process. Detroit: Wayne State University Press.

Goodman, K. S. (1970). Behind the eye: What happens in reading. In K. S. Goodman & O. S. Niles (Eds.), Reading: Process and program. Urbana, IL: NCTE.

Gough, P. B. (1972). One second of reading. In J. Kavanagh & I. Mattingly (Eds.), Language by ear and by eye. pp. 331-358. Cambridge, MA: MIT Press.

Gough, P. B., & Hillinger, M. L. (1980). Learning to read: An unnatural act. Bulletin of the Orton Society, 30, 179-196.

Gough, P. B., & Tunmer, W. E. (1986). Decoding, reading, and reading disability. Reading and Special Education, 7, 6-10.

Juel, C. (1990). The role of decoding in early literacy instruction and assessment. In L. M. Morrow & J. K. Smith (Eds.), Assessment for instruction in early literacy, pp. 135-154. Englewood Cliffs, NJ: Prentice Hall.

Juel, C. (1991). Beginning reading. In R. Barr, M. L. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), Handbook of reading research, Vol. 2, pp. 759-788. White Plains, NY: Longman.

Just, M. A., & Carpenter, P. A. (1980). A theory of reading: From eye fixations to comprehension. Psychological Review, 87, 329-354.

Kintsch, W., & van Dijk, T. (1978). Toward a model of text comprehension and production. Psychological Review, 85, 363-394.

Kolers, P. (1976). Pattern-analyzing memory. Science, 191, 1280-1281.

LaBerge, D., & Samuels, S. J. (1974). Toward a theory of automatic information processing and reading. Cognitive Psychology, 6, 293-323.

Liberman, I. Y., & Shankweiler, D. (1991). Phonology and beginning to read: A tutorial. In L. Rieben & C. A. Perfetti (Eds.), Learning to read: Basic research and its implications, pp. 3-17. Hillsdale, NJ: Erlbaum.

Lomax, R. G., & McGee, L. M. (1987). Young children's concepts about print and reading: Toward a model of word reading acquisition. Reading Research Quarterly, 22, 237-256.

Marshall, J. (1989). The hat. In Houghton Mifflin Literary Reader Beginning to read A, pp. 63-71. Boston: Houghton Mifflin.

Matthewson, G. C. (1985). Toward a comprehensive model of affect in the reading process. In H. Singer & R. B. Ruddell (Eds.), Theoretical models and processes of reading, 2nd ed., pp. 841-856. Newark, DE: International Reading Association.

Morris, D. (1980). Beginning readers' concept of word. In E. Henderson & J. Beers (Eds.), Developmental and cognitive aspects of learning to spell: A reflection of word knowledge, pp. 97-111. Newark, DE: International Reading Association.

Morris, D. (1981). Concept of word: a developmental phenomenon in the beginning reading and writing processes. Language Arts, 58, 659-668.

Morris, D. (1993). The relationship between concept of word in text and phoneme awareness in learning to read: A longitudinal study in kindergarten. Research in the Teaching of English, 27, 133-154.

Ogle, D. M. (1986). K-W-L: A teaching model that develops active reading of expository text. Reading Teacher, 40, 564-570.

Palincsar, A., & Brown, A. L. (1983). Reciprocal teaching of comprehension monitoring activities (Technical Report No. 269). Urbana, IL: University of Illinois, Center for the Study of Reading. (ERIC Document Reproduction Service No. ED 225 135)

Pearson, P. D., & Gallagher, M. C. (1983). The instruction of reading comprehension. Contemporary Education Psychology, 8, 317-344.

Peek, M. (1985). Mary wore her red dress and Henry wore his green sneakers. Boston: Clarion.

Piaget, J. (1973). The language and thought of the child. New York: World.

Rumelhart, D. (1977). Toward an interactive model of reading. In S. Dornic (Ed.), Reading problems. Boston: Addison-Wesley.

Samuels, S. J., & Kamil, M. L. (1984). Models of the reading process. In P. D. Pearson (Ed.), Handbook of reading research, pp. 185-224. New York: Longman.

Seidenberg, M. S., & McClelland, J. L. (1989). A distributed developmental model of word recognition and naming. Psychological Review, 96, 523-568.

Share, D. L., Jorm, A. F., Maclean, F., & Matthews, R. (1984). Sources of individual differences in reading acquisition. Journal of Educational Psychology, 76, 1309-1324.

Singer, H., & Ruddell, R. B. (1985) Introduction to models of reading. In H. Singer & R. B. Ruddell (Eds.), Theoretical models and processes of reading, 3rd ed., pp. 620-629. Newark, DE: International Reading Association.

Smith, F. (1971). Understanding reading. Hillsdale, NJ: Erlbaum.

Smith, F. (1992). Learning to read: The never-ending debate. Phi Delta Kappan, 432-441.

Snow, C. E. (1991). Language proficiency: Towards a definition. Unpublished manuscript, Harvard University.

Stanovich, K. E. (1980). Toward an interactive-compensatory model of individual differences in the development of reading fluency. Reading Research Quarterly, 16, 32-71.

Stanovich, K. E. (1984). The interactive-compensatory model of reading: A confluence of developmental, experimental and educational psychology. Remedial and Special Education, 5, 11-19.

Vygotsky, L. S. (1962). Thought and language. Cambridge, MA: MIT Press.

Walsh, D. J., Price, G. G., & Gillingham, M. G. (1988). The critical but transitory importance of letter naming. Reading Research Quarterly, 23(1), 108-122.

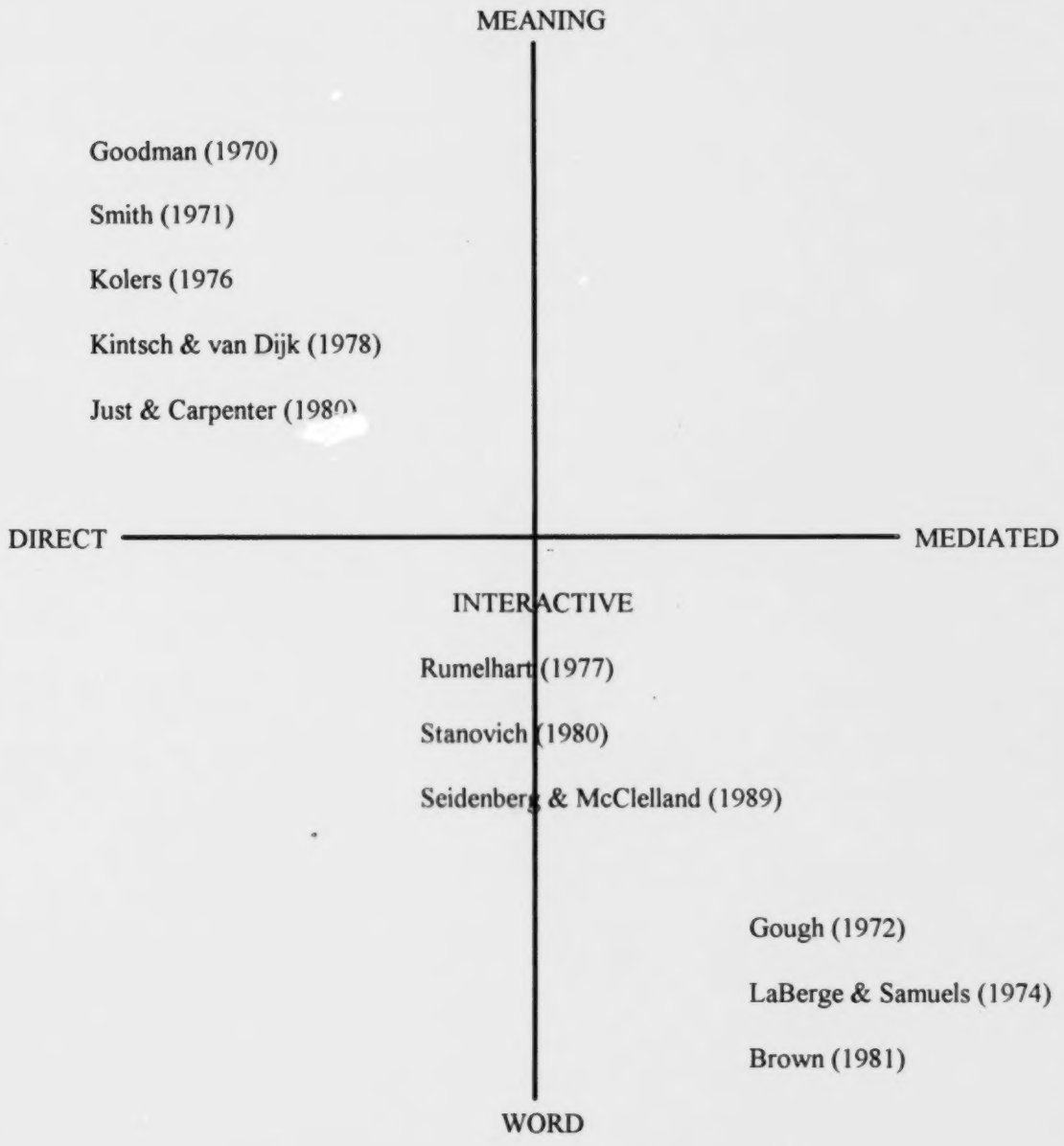

Figure 1. Dimensions emphasized by various models of reading.

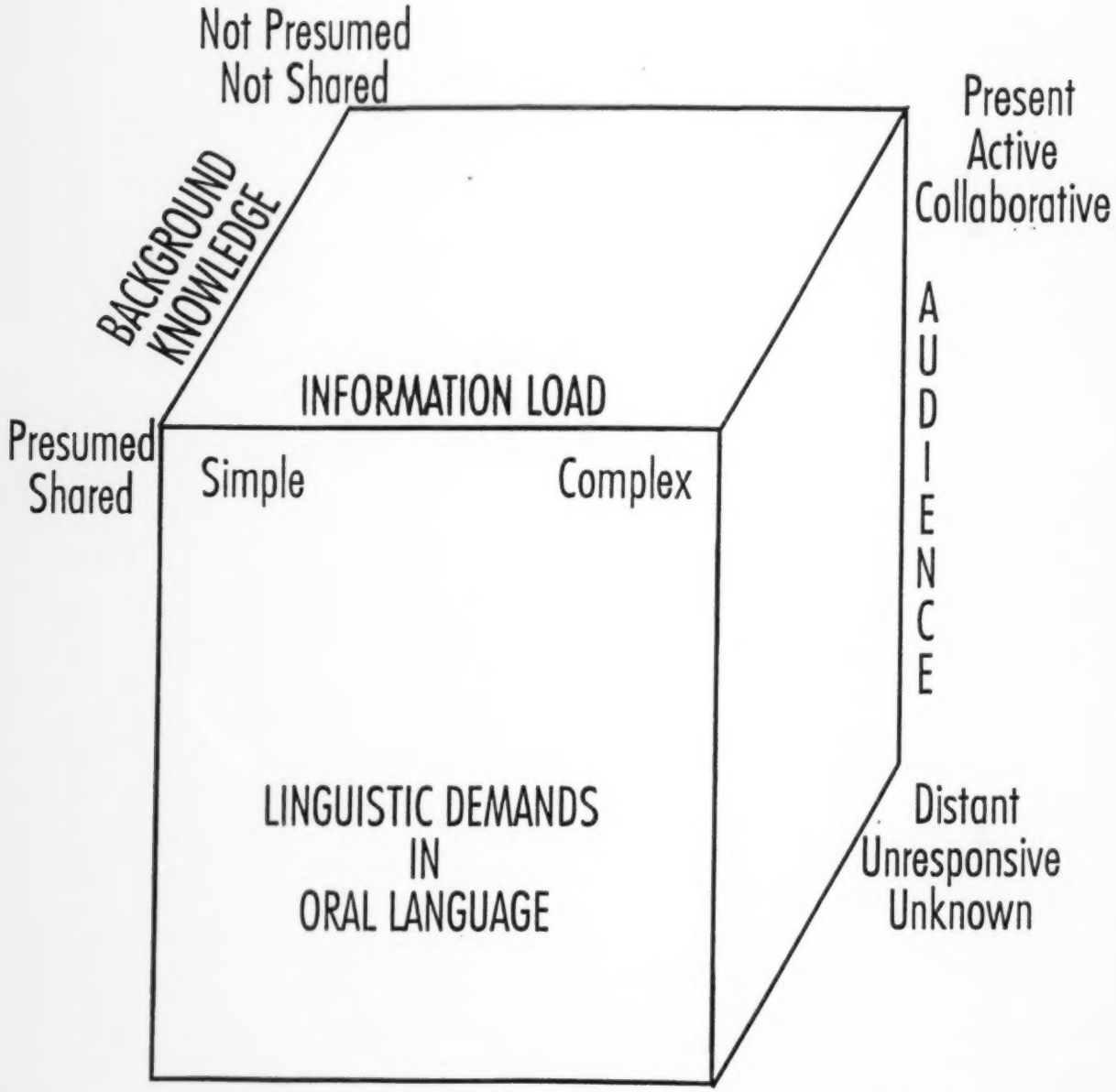

Figure 2. Snow's (1991) model of oral language proficiency.

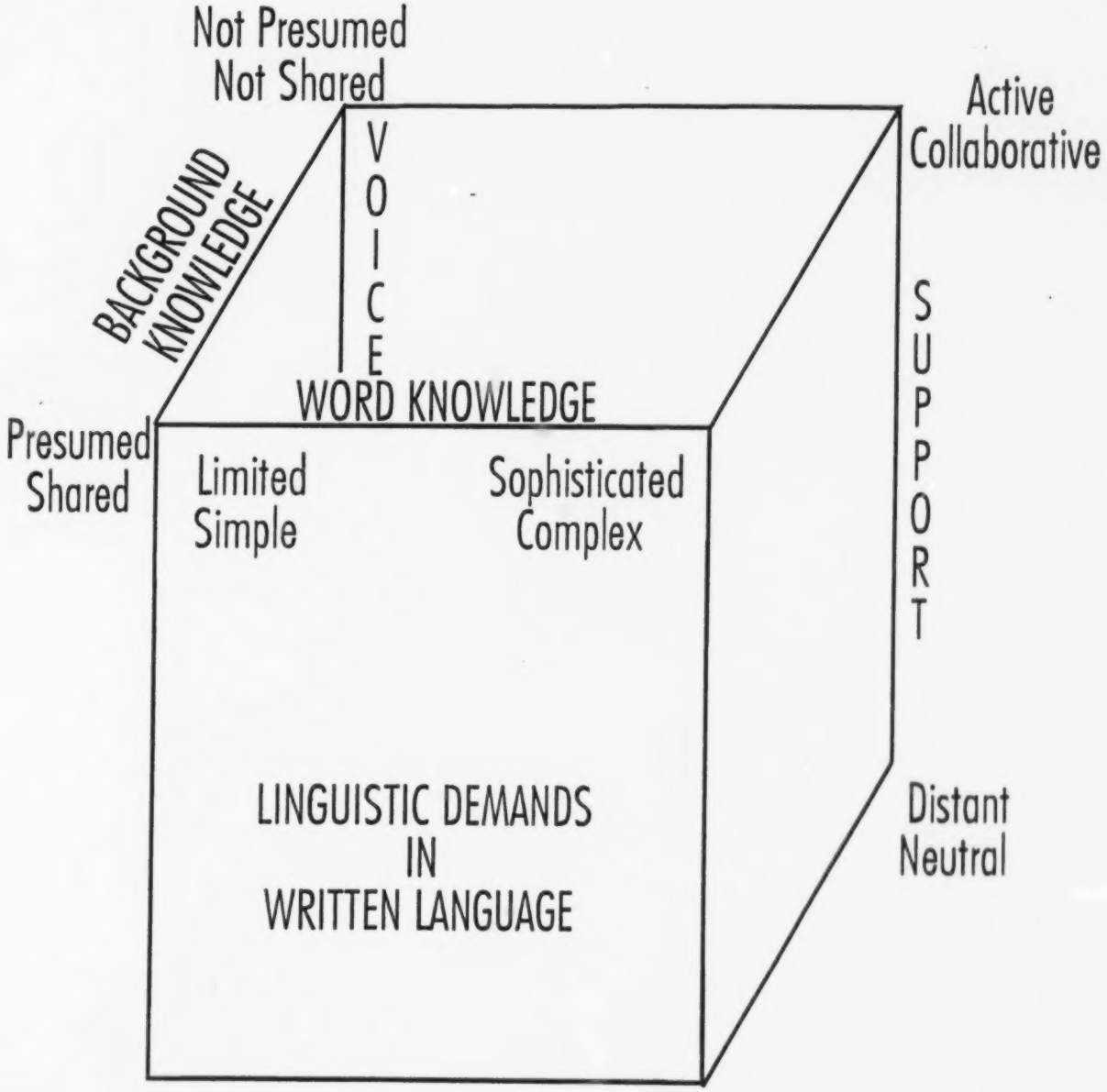

Figure 3. Model of reading proficiency based on Snow's language proficiency model.